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Middle Twp. man tries to curb phragmites by cutting, replanting By RICHARD DEGENER

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MIDDLE TOWNSHIP - Most programs to rid the wetlands of the pesky marsh reed known as phragmites rely on massive amounts of herbicides, intense fires, giant excavators to dig them out or change the flow of the tides to salt them out.

There is one other method. It relies on one old man and his simple machine.

The man: Dr. Russell Down, a retired emergency room doctor, 71 years young, who rules his sprawling 49-acre bayside estate here off Holmes Landing Road.

The machine: It's an old walk-behind mower with a single whirling blade powered by an 8-horsepower Briggs and Stratton engine. There is no electric start, just a pull chord. It doesn't have pneumatic tires, and that's a good thing when dealing with phragmites.

Down likes to tell a story about the day he walked by an old school bus he has parked on the property. He heard a hissing noise coming out of the bus. It turns out a phragmites reed had grown right through the tire, puncturing it just as he walked by.

Phragmites reeds are somewhat legendary for what they can grow through. They have been known to push their way through pavement. They are also infamously hard to get rid of, thriving on every continent except Antarctica, and in this region, so invasive they are often referred to as the "kudzu of the coast."

Down is hoping to break new ground on what it takes to get rid of them. The experiment began when Down read about the U.S. Department of Agriculture's Wildlife Habitat Improvement Program, or WHIP, which gives grants to property owners trying to improve backyard habitat or fight invasive species such as phragmites, purple loosestrife, autumn olive, multiflora rose and porcelain berry.

Down got a \$2,500 grant to mow seven acres of phragmites for five years,



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including extensive mowing three times a year for the first two years and then three years of selective mowing to foster the growth of other species competing with the reeds.

"It comes down to about \$10 an hour for the mowing. It's the worst job you'll ever have for \$10 an hour. It's buggy and sweaty. You can't use a riding mower. It would sink," Down said.

Down's theory is that cutting would allow other species to get a foothold. Phragmites grow so dense and tall they shade everything else out. He argues that herbicides kill everything, creating mud flats, while burning actually helps phragmites germinate.

Down began cutting the stands of thick phragmites in 1999. Leading a tour of the project this week, he pointed to all the new growth of other species.

"There's wild morning glory, inkberry, yellow dock and mulberry trees. About three quarters of the seven acres is not just phragmites anymore. Maybe you'd still have to burn and poison, but only where it didn't work," Down said.

The experiment is sure to draw interest around southern New Jersey, where phragmites have taken over many freshwater and brackish wetlands, creating what biologists call a "monoculture" of a single plant that reduces the diversity of wildlife using the marsh.

The most successful mode of attack has been subjecting the reeds to saltwater tides, which kills them, but that isn't practical in freshwater wetlands. The main defense in freshwater wetlands has been spraying glyphosate-based herbicides and conducting controlled burns. This has met only limited success.

The latest example is a U.S. Army Corps of Engineers project beginning in September to apply herbicide to phragmites at the South Cape May Meadow in Lower Township. The dead stalks would then be burned during the winter. Has Down found a better way for the project at South Cape May?

USDA biologist Elizabeth Clarke said Down's project is on too small of a scale to tell whether it would work in South Cape May, which covers an area of almost 100 acres.

"I think he had mixed results. Restoring tidal flow is the fastest and first option one prefers," Clarke said.

Down seems to have a love-hate relationship with the plant that, according to one account, came here from England in the ballast of a ship in the 19th century. Down once welcomed the plant he is now trying to eradicate. In 1967 he had dredged new channels on his property for an aquaculture project. He was worried a storm would wash out the mud banks he had created, so he planted phragmites seeds in the dirt, never envisioning how fast they would spread.

Yet, Down also appreciates the phragmites. They did serve a purpose in the beginning. The banks did not wash away and the phragmites, the only thing that would grow in the highly acidic marsh mud the banks were made of, slowly changed the pH of the soil so others things could survive. He said the soil originally had a highly acidic pH of 3, and now it has a more alkaline pH of 6. Seeds that blow in or are dropped by birds can now germinate and grow.

The key now is to use the mower to cut areas that still have phragmites while mowing around new species that have taken root. Down argues his project

could be done on a larger scale such as in South Cape May Meadows.

"Burning will cause seeds to germinate and squander any chance at biological succession. Poison is going to kill everything. Once the pH is up, I don't think the best way to go is to burn and poison," Down said.

Sounds plausible. Now all the Army Corps of Engineers needs is to find some men like Russell Down, an old man taking on a big task with a simple machine.

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